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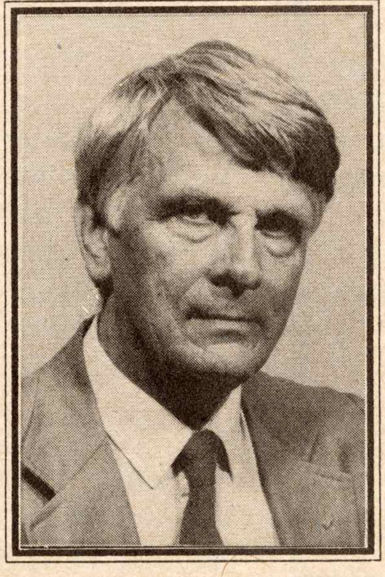
Engineering & Computer Science BITS

NEW ACTING CHAIR FOR MECHANICAL ENGINEERING

On Wednesday, January 12, Dr. Tadeusz Krepec replaced Dr. Donat Taddeo as acting Chair of the Department of Mechanical Engineering. While Dr. Krepec admitted that the position would present new challenges, he said that he was ready to face them, with the help of all the others in the Department.



Dr. Krepec completed both his Bachelors and Masters Degrees in Mechanical Engineering at the Polytechnic of Warsaw in the early 1950's. From 1952 to 1960 he lectured at the Polytechnic. He moved to industry in the 60's, first as a managing Research and Development Engineer with Warsaw's Mechanical Establishment and then as an Independent Scientist at the city's Aviation Institute. During this period he worked on and received his Doctorate from the Polytechnic, where he would return to act as a Senior lecturer until he left Poland in 1972.

After a year in Africa, where he worked on an engineering project in the Sahara and lectured at the University of Tunis, Dr. Krepec came to Montreal. He joined Aviation Electric Limited (now Bendix Avelex Inc.) as an Assistant Project Engineer in the company's Fuel Controls Group. While there he developed a new fuel control unit. When that unit went into production in engines at Pratt and Whitney in 1977, he followed it and continued to work on its development. Feeling the urge to return to teaching, he left Pratt and Whitney in early 1979 to join the Department of Mechanical Engineering at Concordia.

Dr. Krepec is a very vital and active member of the Faculty. He has been a member of the Faculty Tenure Committee, the Graduate Studies Committee and the Undergraduate Studies Sub-Committee. His research, both alone and with others, has brought in nearly $500,000 in grants over the past five years. Outside the University he is a member of Ordre des Ingénieurs du Québec (OIQ), the Fonds pour la Formation de Chercheurs et à l'Aide à la Recherche (FCAR) Grant Selection Committee and the Governing Board of the Montreal section of the Society of Automotive Engineers (SAE).

For the past 11 years Dr. Krepec has been the faculty advisor to the Concordia student chapter of SAE. Many of his "off-duty" hours have been spent helping students down in "the Cage" as they convert vehicles to run on alternate fuels, or design machines that walk. He feels this conversion of knowledge to application is as much a part of his teaching as his classroom lectures. Dr. Krepec's devotion to SAE was recognized in 1991 when he received the Society's Outstanding Faculty Advisor Award.

In the short term, Dr. Krepec intends to administer the Department of Mechanical Engineering until such time as the search committee appoints a permanent chair. In the long-term, he wants to continue his work in alternative fuels research, publish another book or two and work with the students in SAE.

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FACULTY PLANS WORKSHOP FOR GRADUATE STUDENTS & PROFESSORS

Graduate students and their supervisors are invited to attend a Faculty workshop on Recognition of Research Contributions and Research Supervision. The one day session, to be held Tuesday, February 22, 1994, has three objectives:

1. To acquaint every graduate student in the Faculty with the document *Policy on Research Supervision, Graduate Student Responsibilities, and Research Recognition in Publications*.
2. To receive comments and suggestions from the graduate student body for improvement of the document.
3. To open a dialogue between graduate students and professors so that all parties can better understand the issues relating to research recognition and supervision, and the responsibilities of graduate students.

In order to provide participants with a wider view of the topic, several speakers from outside the Faculty, including Dr. Roland Doré, Director of the Canadian Space Agency, will take part in the workshop.

The Policy on Research Supervision, Graduate Student Responsibilities, and Research Recognition in Publications was developed by Profs. Hugh McQueen and Richard Cheng (Mechanical), along with M. Marie Vanasse (Centre de recherche en calcul appliqué [CERCA]). It addresses many research issues including copyright, ownership of research and the responsibilities both graduate students and their supervisors. The policy was adopted by the Department of Mechanical Engineering in March, 1993, and it is now under consideration by the Faculty as a whole.

Posters, invitations and a copy of the policy text will be sent to all graduate students in the near future.

Anyone wanting more information about the workshop may contact Prof. Hugh McQueen at 848-3145 or Prof. Ching Suen at 848-4212.

LONG-TERM RESEARCH PAYS OFF FOR FACULTY TEAM

Between 1985 and 1993 Dr. Suong Hoa, head of the Composites Structures and Materials Research Group, along with Paul Ouellette and L. Li, received two contracts from Transport Canada and another from Transport Québec which totalled just under a half million dollars. With this money they conducted research into non-destructive, acoustic emission, testing of fibre reinforced, plastic highway tankers. In November of 1993 they published their findings. The testing procedure which they developed at Concordia is now being used world-wide and is the recommended practice of the Committee on Acoustic Emission from Reinforced Plastics for the testing of pressurized, highway tankers made of fiberglass, reinforced plastic.

EVENTS OF NOTE

* L'Observatoire de l'efficacité énergétique est chargé de suivre la mise en place de la stratégie québécoise d'efficacité énergétique et de s'assurer qu'elle obtienne les meilleurs résultats possibles. Dès son premier rencontre, le Comité directeur a pris la décision de créer trois groupes de travail. Le groupe de travail sur le secteur commercial et institutionnel sera formé de représentants d'Hydro Québec, d'Ultramar Canada, d'Air-Ins Inc., de Ressources naturelles Canada, du Bureau de l'efficacité énergétique et du Centre de recherche sur le bâtiment de l'Université Concordia (Dr. Radu Zmeureanu).
- extraits de *La lettre de l'Observatoire de l'efficacité énergétique*, quatrième trimestre 1993

* The Concordia student chapter of the Canadian Society of Industrial Engineers (CSIE) will be holding a tour of the Se. Thérèse General Motors Plant on February 8. Those wishing to attend can register at H 880-10, or get more information at 848-7912.

* After the Los Angeles earthquake of January 17, Dr. Paul Fazio of the Centre for Building Studies was in great demand. Dr. Fazio, an expert on design for earthquake forces, was interviewed by several members of the local media, including radio stations CJAD and CIQC.

* Upcoming events:
-The 10th Annual Concordia University CSCE Bridge Competition...March 4, 1994.
-IEEE/CASI Robowars, IEEE Project Competion and IEEE Circuits Competition...March 25, 1993.

FACULTY FACES

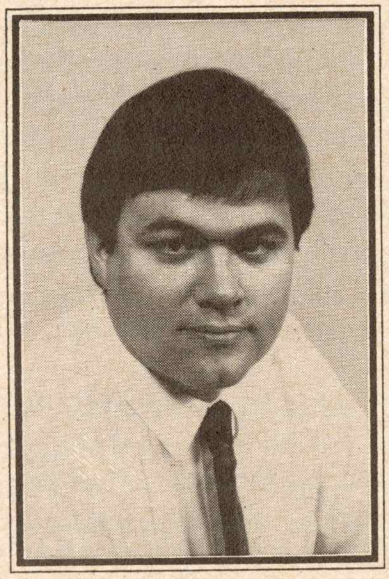
Dr. Bill Lynch - Department of Electrical & Computer Engineering

Faculty Faces is a regular feature of *Bits*, focusing on personalities within Engineering and Computer Science.

When Bill Lynch was three years old his uncle went to the University of Waterloo to study engineering. “And my Dad was always into technical stuff, he encouraged us in that direction. I guess that’s why I wanted to be an engineer.” Following what is becoming a family tradition (his brother now studies engineering there), Dr. Lynch completed his undergraduate electrical degree at the University of Waterloo. Like all other students at the university, he was in a co-op programme. “Co-op can be interesting, but it’s not for everyone. The big advantage is that you graduate with real experience. But the disadvantage is that it takes an extra year. I think if students can find good summer jobs in engineering, they are just as well off in a regular programme.”

While in university, he had the opportunity to take part in a one-term exchange programme to France. The exchange, part cultural and part academic, is an experience he recommends for undergraduates, with a few words of advice, “You have to have some extra money to go on an exchange. And, you literally have to do a lot of homework before you leave. Sometimes it is hard to get credit for courses taken abroad. If you’re not willing to delay graduation, it may be safer to take a few extra courses before an exchange.”

After Waterloo, Dr. Lynch headed straight into the Ph.D. programme in electrical engineering at Princeton University. He did his thesis research on image compression, an aspect of signal processing. “I was very happy at Princeton, academically I learned a great deal. But when I graduated I wanted to come back to Canada.” With that thought in mind, he finished his doctorate at the end of May, 1993, and was at Concordia, ready for work, in June. “The timing,” he admitted, “was a bit tight.”

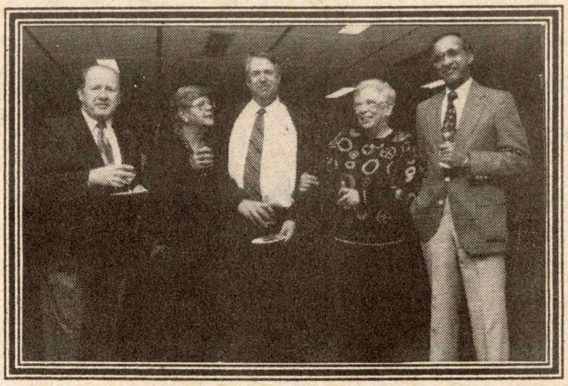


Despite the fact he arrived at Concordia a bit quickly and a little out of breath, Dr. Lynch seems to be settling in pretty well. He spent the summer orienting himself, and continuing his research as part of the Centre for Signal Processing and Communications (CENSIPCOM). He is still focusing on image compression. Because images are composed of huge amounts of data, it is easier to store them and transmit them in a compressed form. As a graduate student, Dr. Lynch worked with lossy compression, where certain bits of the image can be lost without affecting the final quality of the transmitted picture too much. This is the type of compression which is being used to develop the standard for high definition television. “Once that standard is set,” he explained, “it will take a really large advance in the field before the standard is changed.” That is the reason he has reoriented his efforts to focus on lossless compression, that is, image compression in which none of the quality will be lost. “For things like medical imaging lossless compression is very important. When a doctor is looking at a picture of a developing cancer, he or she wants to be sure nothing is missing, peoples’ lives depend on it.”

Along with his research, Dr. Lynch is also teaching. Last term he taught one undergraduate course (ELEC 442 - Introduction to Digital Signal processing) and one graduate course (ELEC 660 - Digital Signal Processing). This term he is teaching ENGR 371 -Probability and Introduction to Random Processes in Engineering. Except for a few lectures at Princeton, he had never really taught until coming to Concordia, it was a learning experience. “Half way through the term I realized that the same students were always answering my questions. I had to adjust my style to get the other students involved. Overall, it was a very positive experience for me, but I guess I’ll find out how well I actually did when I get my teacher evaluations.”

Reduce, Reuse, Recycle & Recover -Please do your part, recycle this copy of Bits.

LONG TIME FACULTY MEMBER RETIRES



Ann Mylchreest was born in Alberta, but at the age of five moved to the Isle of Man, where she was raised. When she finished high school in the middle of World War II, instead of going on to university, Ann joined the Royal Canadian Air Force, and was stationed in the UK. Working in the Cypher Office of RCAF's London Headquarters throughout the war, she rose to the position of Leading Air Woman. "It was always exciting," she says, "but also a little stressful." At the end of the war, Ann was given the option of being decommissioned in the UK or in Canada. "I chose Canada. I thought I'd come here, travel a bit and take a look at the place before returning to Britain, but I never went back." Instead, she took veterans' retraining and completed a BA at McGill. Even before graduating she was working in a pulp and paper research lab, where she stayed until the facility moved out of Montreal. "It wasn't so easy to commute in those days," she explains. At that time, Ann moved to the Pulp and Paper Association, then located in the Sun Life Building. She worked there until 1968, when she found a job at Sir George Williams University through a friend. She began work in Mechanical Engineering and soon moved to the Dean's Office, first as Secretary to the Dean and later as Assistant to the Dean. When she retired in November, Ann Mylchreest had been with the Faculty for over twenty-five years.

On December 16, 1993, during the course of its Christmas party, the Faculty thanked Ann for her long-term service and commitment. She will be receiving a Macintosh from the Faculty to help her while away the hours of her retirement. Pictured with Ann Mylchreest (2nd from right) are (L-R): Jack Fearnley (Computing Services), Denise Maisonneuve (Dean's Office), John Elliott (Mechanical) and Tom Sankar (Mechanical).

BUILDINGS, ENERGY AND AIR QUALITY

In large, high rise buildings it is often difficult to balance the need for good indoor air quality with the need for energy efficiency. Ventilation systems designed to provide air quality at or above ASHRAE (American Society of Heating, Refrigerating and Air conditioning Engineers) Standard 62-89, are often huge consumers of energy. Lost revenues due to lower worker productivity and health problems (which can be hard to connect to poor air quality) are less easy to quantify than savings provided through the use of more energy efficient ventilation systems.

Dr. Fariborz Haghighat (Centre for Building Studies) is organising the *2nd International Conference on IAQ, Ventilation and Energy Conservation in Buildings*, to be held from May 10 to 12, 1995, in Montreal. The conference will serve as a forum for the presentation and discussion of the most recent developments in building design, construction, maintenance and operation, impacting on these three fields. Of particular interest to organisers are advances which integrate IAQ, ventilation and energy conservation so that building occupants can be provided with better working conditions at a lower cost.

Abstracts of approximately 500 words proposing papers on the above, or related, topics are now being accepted. For more information, please contact Dr. Haghighat at 848-3192.

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